

merging in a representation of operations performed on the second computer by applying at least a portion of the operations to the first computer replica;  
 detecting persistent clashes during at least one of the merging steps; and  
 recovering from at least a portion of the detected persistent clashes.

**32.** The storage medium of claim **31**, wherein the representation of the operations performed on each computer includes an update log and the method further comprises the steps of detecting transient clashes and eliminating at least a portion of the detected transient clashes.

**33.** The storage medium of claim **32**, wherein the method further comprises the step of compressing at least one of the update logs and the steps of detecting and eliminating transient clashes both occur during the compressing step.

**34.** The storage medium of claim **32**, wherein the step of detecting transient clashes comprises identifying a clashing update in an update log, and the eliminating step comprises scanning forward in the log from the clashing update to determine whether a subsequent repairing update will remove a clash condition associated with the clashing update.

**35.** The storage medium of claim **31**, wherein the merging out step is preceded by the step of compressing an update log on the first computer to create the representation of operations performed on the first computer.

**36.** The storage medium of claim **31**, wherein the step of detecting persistent clashes comprises detecting incompatible manipulation clashes.

**37.** The storage medium of claim **31**, wherein the step of detecting persistent clashes comprises detecting file content clashes.

**38.** The storage medium of claim **31**, wherein the step of detecting persistent clashes comprises detecting a clash between at least a portion of the distributed database and a structure external to the distributed database.

**39.** The storage medium of claim **31**, wherein the representation of the operations performed on the first computer includes an update log, and the step of recovering from persistent clashes comprises regressing persistently clashing updates from the first computer replica.

**40.** The storage medium of claim **31**, wherein the step of recovering from persistent clashes comprises inserting an update into the update stream.

**41.** The storage medium of claim **31**, further comprising the steps of:

associating a sequence number with each operation performed on the first computer while the first computer is disconnected from the second computer; and  
 maintaining a record on the second computer of which sequence numbers have been applied to the second replica during the merging out step.

**42.** A system for clash handling comprising:

a first computer;

a second computer connected to the first computer by a network link, the first computer and the second computer each containing a replica of a distributed database;

means for merging out a representation of operations performed on the first computer and applying at least a portion of the operations to the second replica;

means for merging in a representation of operations performed on the second computer and applying at least a portion of the operations to the first computer replica;

means for detecting persistent clashes during at least one of the merging steps; and

means for recovering from at least a portion of the detected persistent clashes.

**43.** The system of claim **42**, wherein the representation of the operations performed on each computer includes an update log and said system further comprises means for detecting transient clashes and means for eliminating at least a portion of the detected transient clashes.

**44.** The system of claim **43**, wherein said system further comprises means for compressing at least one of the update logs.

**45.** The system of claim **43**, wherein said means for detecting transient clashes comprises means for identifying a clashing update in an update log, and said means for eliminating transient clashes comprises means for scanning forward in the log from the clashing update and means for determining whether a subsequent repairing update will remove a clash condition associated with the clashing update.

**46.** The system of claim **42**, wherein said means for detecting persistent clashes comprises means for detecting incompatible manipulation clashes.

**47.** The system of claim **42**, wherein said means for detecting persistent clashes comprises means for detecting file content clashes.

**48.** The system of claim **42**, wherein said means for detecting persistent clashes comprises means for detecting a clash between at least a portion of the distributed database and a structure external to the distributed database.

**49.** The system of claim **42**, wherein the representation of the operations performed on the first computer includes an update log, and said means for recovering from persistent clashes comprises means for regressing persistently clashing updates from the first computer replica.

**50.** The system of claim **42**, wherein said means for recovering from persistent clashes comprises means for inserting an update into the update stream.

**51.** The system of claim **42**, further comprising:

means for associating a sequence number with each operation performed on the first computer while the first computer is disconnected from the second computer; and

means for maintaining a record on the second computer of which sequence numbers have been applied to the second replica during the merging out step.